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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/607,954

06/26/2003

Ching-Yang Juan

Q1088

3078

34335

7590

12/13/2005

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EXAMINER

LEE, HWA S

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/607,954	JUAN ET AL.	
	Examiner	Art Unit	
	Andrew Hwa S. Lee	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-18 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3 and 6-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watterson et al (US 6,526,079) in view of Applicant's disclosure.

With regards to **claims 1 and 14**, Watterson et al (Watterson hereinafter) show a single etalon optical wavelength reference device comprising the steps of:

- providing a portion of optical signals emitted from the radiation source as an input light beam;
- dividing the input light beam into a plurality of sub light beams by a grating at the same diffraction angle;
- passing the sub light beams through an etalon for forming response curves;
- rotating the etalon for forming distinct response curves;
- transducing the distinct response curves into electric signals; and
- comparing the electric signals for locking the center wavelength of the radiation source.

Watterson does not expressly state that a *portion* of the optical signals is provided as input light, however, it is inherent that portion is used or otherwise all of the light would sent to the wavelength locker and there would be no signal available for the communication system. As for the locking of the wavelengths to the ITU grid of claim 14 (and claim 7), Applicant's specification discloses the desire to lock wavelengths to the ITU grid. At the time of the invention one of ordinary skill in the art would have set the wavelengths of the Watterson device in order to conform to the ITU grid.

With regards to **claim 2**, Watterson shows the response curves are transduced to the electric signals by photo detectors (P1, P2).

With regards to **claim 3**, Watterson shows making a calculation (30) on the electric signals by a servo system to obtain a feedback signal (28); and adjusting the center wavelength of the input optical signals according to the feedback signal.

With regards to **claim 6**, Watterson shows the grating divides the input light beam into paired sub light beams at the same diffraction angle, and the etalon is rotated at an angle for forming distinct response curves.

With regards to **claim 8**, Watterson shows the distinct response curves of the paired sub light beams are transduced into two electric signals, and a servo system is adopted for generating a feedback signal by calculating the difference of the two signals.

With regards to **claims 9-14 and 16-18**, although Watterson does not expressly show every embodiment of the source for laser emission, it would be obvious to one of ordinary skill in the art that any tunable source could be used and tuned. Official Notice is given that tunable Fabry-Perot etalons are well known sources of tunable laser emissions and one of ordinary skill in the art at the time of the invention would have used a tunable Fabry-Perot etalon as a tunable source since it is known in the art that Fabry-Perot etalons are functional equivalents of light

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sources to those cited by Watterson (column 6, lines 2-5) and is well known to be very accurate.

With regards to claims 13 and 14, please see Figure 4.

With regards to **claim 15**, Watterson shows:

a grating (26) to divide a portion of input optical signals emitted from the radiation source into a plurality of sub light beams;

an etalon (18) to receive the plurality of sub light beams that further form distinct response curves;

a plurality of photo detectors (P1, P2) for transducing the response curves into electric signals; and

a servo system (30) for comparing the electric signals and generating a feedback signal to lock the center wavelength of the input optical signals.

Allowable Subject Matter

1. **Claims 4 and 5** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to show or to suggest a method for wavelength locking comprising the grating and etalon as claimed wherein the servo system utilizes one of the sub light beams as a flag for comparing the electric signals

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on 571-272-2800 ext 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Andrew Hwa Lee
Primary Examiner
Art Unit 2877